IN THE CLAIMS

Please amend the claims as follows:

1. (original) Bit detector for detecting the bit values of bits of a channel data stream stored on a record carrier, wherein the channel data stream comprises a channel strip of at least two bit rows one-dimensionally evolving along a first direction and aligned with each other along a second direction, said two directions constituting a two-dimensional lattice of bit positions, said bit detector comprising:

- a photo detector for detecting light reflected from or transmitted through said record carrier in response to one or more incident light beams, each light beam being directed onto a position along said second direction, said photo detector being partitioned into at least two detector partitions for detecting part of the reflected or transmitted light and for generating partial HF signal values, and

- a signal processing means for determining the bit values of the bits of said channel data stream from said partial HF signal values.

2. (original) Bit detector as claimed in claim 1, wherein said photo detector is adapted to image the plane of an exit pupil of a

lens onto said photo detector, said lens having an exit pupil being provided in an optical read-out unit for directing the light reflected from or transmitted through said record carrier onto said photo detector.

3. (original) Bit detector as claimed in claim 1, wherein the bits of said channel data stream are arranged on a two-dimensional hexagonal or square lattice.

4. (currently amended) Bit detector as claimed in claim 2 and 3, wherein the detector partitions are oriented along the directions of the reciprocal space lattice corresponding to the real space lattice of bits.

5. (original) Bit detector as claimed in claim 3, wherein said photo detector is partitioned into an even number of equally sized detector partitions, in particular into four equally sized detector partitions, in case of a square lattice, or into six equally sized detector partitions, in case of a hexagonal lattice.

6. (original) Bit detector as claimed in claim 5, wherein said detector partitions are coupled into pairs of two detector partitions located on opposite sides of said photo detector, each

pair of detector partitions being adapted to generate one partial HF signal value from the light detected by the detector partitions of the pair.

7.   (original)   Bit detector as claimed in claim 5, wherein said signal processing means are adapted for generating a set of push-pull signals by subtracting partial HF signal values generated by detector partitions located on opposite sides of said photo detector.

8.   (original)   Bit detector as claimed in claim 1, wherein said photo detector is adapted to image the plane of an information layer on said record carrier onto said photo detector.

9.   (currently amended)   Bit detector as claimed in claim 3 and 8, wherein said photo detector is partitioned, in case of a hexagonal lattice, into a number of hexagonally shaped detector partitions, in particular into a cluster of seven hexagonally shaped detector partitions having one central and six surrounding detector partitions.

10.   (original)   Bit detector as claimed in claim 1, wherein said signal processing means are adapted for determining the bit value

of a bit of said channel data stream from partial HF signal values generated by said photo detector from light detected in response to a light beam directed on the bit whose bit value shall be detected and at least one light beam directed on a neighbouring bit of said bit.

11. (original) Bit detector as claimed in claim 3, wherein the bits of said channel data stream are grouped into hexagonal lattice clusters having one central bit and six nearest neighbour bits or square lattice clusters having one central bit and four or eight nearest neighbour bits and wherein said signal processing means are adapted for determining the bit value of a bit of said channel data stream from said partial HF signal values and the sum of said partial HF signal values generated in response to the same incident light beam.

12. (original) Bit detector as claimed in claim 1, comprising a number of said photo detectors each having at least two detector partitions for each bit row.

13. (original) Bit detector as claimed in claim 1, wherein the partial HF signal values, that are generated from the detector partitions for each row, are transformed into another set of

modified partial HF signal values that are further used in the signal processing for bit detection.

14. (original) Bit detector as claimed in claim 13, wherein said modified partial HF signal values are generated by means of symmetry operations.

15. (original) Bit detection method for detecting the bit values of bits of a channel data stream stored on a record carrier, wherein the channel data stream comprises a channel strip of at least two bit rows one-dimensionally evolving along a first direction and aligned with each other along a second direction, said two directions constituting a two-dimensional lattice of bit positions, said bit detector comprising the steps of:
- detecting light reflected from or transmitted through said record carrier in response to one or more incident light beams, each light beam being directed onto a position along said second direction, by a photo detector which is partitioned into at least two detector partitions for detecting part of the reflected or transmitted light,
- generating partial HF signal values by said detector partitions from the detected part of said light, and

- determining the bit values of the bits of said channel data stream from said partial HF signal values.

16. (original) Photo detector for use in a bit detector for detecting the bit values of bits of a channel data stream stored on a record carrier, wherein the channel data stream comprises a channel strip of at least two bit rows one-dimensionally evolving along a first direction and aligned with each other along a second direction, said two directions constituting a two-dimensional lattice of bit positions, said photo detector being adapted for detecting light reflected from or transmitted through said record carrier in response to one or more incident light beams, each light beam being directed onto a position along said second direction, and being partitioned into at least two detector partitions for detecting part of said light and for generating partial HF signal values.

17. (original) Reproduction device for reproduction of a user data stream, which is error correction code encoded and modulation code encoded into a channel data stream and stored on a record carrier, comprising a bit detector as claimed in claim 1 for detecting the bit values of bits of said channel data stream and a modulation code decoder and an error correction code decoder.

18.   (original)   Method of reproduction of a user data stream, which is error correction code encoded and modulation code encoded into a channel data stream and stored on a record carrier, comprising a bit detection method as claimed in claim 15 for detecting the bit values of bits of said channel data stream and a modulation code decoding method and an error correction code decoding method.

19.   (currently amended)   Computer program comprising program code means for causing a computer to perform the steps of the methods as claimed in ~~claims 15 or 18~~claim 15 when said computer program is executed on a computer.